

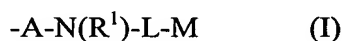
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Amendments to the Claims

Please amend claims 1, 4, 6, 8-10, 13-15, 17, 18, 20, 22, 24, 25, 27, 28, 30, 32, 33, 35, 36, 38, 39 and 43-45, and add new claim 46. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing:

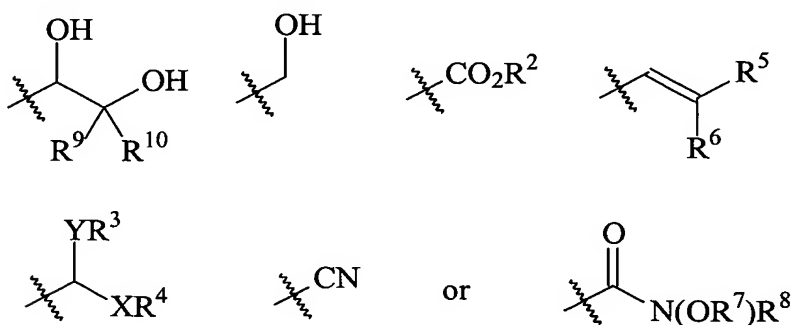
1. (currently amended) A modified capsular oligosaccharide or polysaccharide comprising a moiety of the formula (I):



wherein:

A is a bond, -C(O)- or -OC(O)-
R¹ is selected from H or C₁-C₆ alkyl;
L is a C₁-C₁₂ alkylene group;
M is a masked aldehyde group.

2. (original) The modified capsular saccharide of claim 1 wherein A is -OC(O)-.
3. (original) The modified capsular saccharide of claim 1 or 2 wherein R¹ is H.
4. (currently amended) The modified capsular saccharide of any ~~preceding~~ one of claims 1 to 3 wherein L is a C₁-C₆ alkylene group.
5. (original) The modified capsular saccharide of claim 4 wherein L is -CH₂CH₂CH₂-.
6. (currently amended) The modified capsular saccharide of any ~~preceding~~ one of claims 1 to 3 wherein the masked aldehyde is selected from:



wherein:

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R² is selected from H, C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl;

X and Y are the same or different and are independently selected from O or S;

R³ and R⁴ are independently selected from C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl; or R³ and R⁴ are joined to form a C₃, C₄, C₅, C₆, C₇ or C₈ cycloalkyl ring containing the heteroatoms X and Y;

R⁵ and R⁶ are independently selected from H, C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl; or R⁵ and R⁶ are joined to form a C₃ or C₁₂ cycloalkyl ring;

R⁹ and R¹⁰ are independently selected from H, C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl; or R⁹ and R¹⁰ are joined to form a C₃ to C₁₂ cycloalkyl ring; and

R⁷ and R⁸ are independently selected from C₁-C₁₂ alkyl or C₃-C₁₂ cycloalkyl groups.

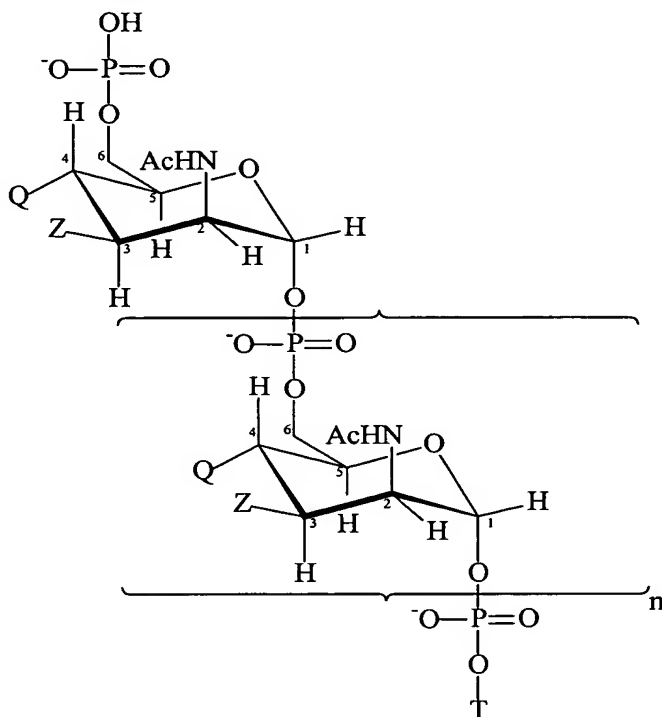
7. (original) The modified capsular saccharide of claim 6 wherein the masked aldehyde is -CH(OH)CH₂OH.
8. (currently amended) The modified capsular saccharide of claim 1 ~~or claims 3 to 7~~ comprising a moiety of the formula: -NH(CH₂)₃CH(OH)CH₂OH.
9. (currently amended) The modified saccharide of claim 1 ~~claims 1 to 7~~ comprising a moiety of the formula: -OC(O)NH(CH₂)₃CH(OH)CH₂OH.
10. (currently amended) A modified capsular saccharide comprising a moiety of the formula (II):
$$-A-N(R^1)-L-C(O)H \quad (II)$$

wherein A, R¹ and L are as defined in any one of ~~claims 1 to 5~~ claims 1 to 3.
11. (original) The modified capsular saccharide of claim 10 wherein A is -OC(O)-.
12. (original) The modified capsular saccharide of claim 10 comprising a moiety of the formula: -NH(CH₂)₃C(O)H.
13. (currently amended) The modified capsular saccharide of ~~claims 10 or 11~~ claim 10 comprising a moiety of the formula: -OC(O)NH(CH₂)₃C(O)H

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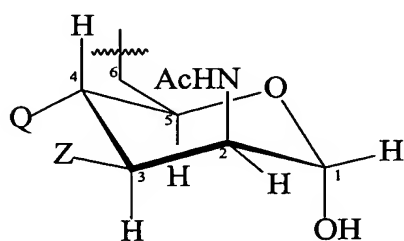
14. (currently amended) The modified capsular saccharide of ~~any preceding~~ claim 1 wherein the capsular saccharide is *Neisseria meningitidis* serogroup A saccharide.

15. (currently amended) A saccharide of the formula:

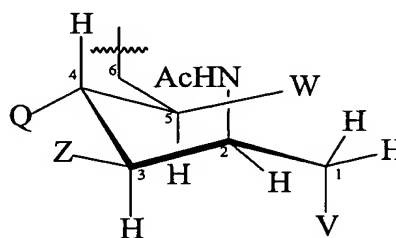


wherein:

T is of the formula (A) or (B):



(A)



(B)

n is an integer from 1 to 100;

each Z group is independently selected from -OH, -OAc, -OC(O)N(R¹)-L-M or -OC(O)N(R¹)-L-C(O)H;

each Q group is independently selected from -OH, -OAc, -OC(O)N(R¹)-L-M or -OC(O)N(R¹)-L-C(O)H;

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W is selected from -OH, -OAc, -OC(O)N(R¹)-L-M or -OC(O)N(R¹)-L-C(O)H;

V is -N(R¹)-L-M or -N(R¹)-L-C(O)H;

wherein R¹, L and M are as defined in claims 1 to 7 3, and provided that the saccharide comprises at least one moiety of the formula -N(R¹)-L-M, -N(R¹)-L-C(O)H, -OC(O)N(R¹)-L-M or -OC(O)N(R¹)-L-C(O)H.

16. (original) The saccharide of claim 15 wherein n is an integer from 15 to 25.

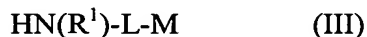
17. (currently amended) The saccharide of claim 15 ~~or 16~~ wherein T is of the formula (A).

18. (currently amended) The saccharide of ~~claims 15 to 17~~ claim 15 wherein Q and Z are a mixture of OH and OAc groups in essentially the same relative proportions as in the native *Neisseria meningitidis* serogroup A saccharide, with the exception that one of the Q or Z groups is -OC(O)N(R¹)-L-M or -OC(O)N(R¹)-L-C(O)H.

19. (original) The saccharide of claim 18 wherein one of the Q groups is -OC(O)N(R¹)-L-M or -OC(O)N(R¹)-L-C(O)H.

20. (currently amended) A process for modifying a capsular saccharide comprising the steps of:

- (a) providing a capsular saccharide having a hydroxyl group;
- (b) reacting the hydroxyl group with a bifunctional reagent in an organic solvent;
- (c) reacting the product of step (b) with an amino compound of formula (III):



wherein R¹, L and M are as defined in any one of claims 1 to 7 3.

21. (original) The process of claim 20 wherein the capsular saccharide is *Neisseria meningitidis* serogroup A saccharide.

22. (currently amended) The process of claim 20 ~~or 21~~, wherein the organic solvent is an aprotic solvent.

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23. (original) The process of claim 22 wherein the aprotic solvent is selected from dimethylsulfoxide (DMSO), dimethylformamide (DMF), formamide, hexamethylphosphoramide (HMPA), hexamethylphosphorus triamide (HMPT), 1,3-dimethyl-3,4,5,6-tetrahydro-2(1*H*)-pyrimidinone (DMPU) or dimethylacetamide (DMAC).
24. (currently amended) The process of ~~claims 22 or 23~~ claim 22 wherein the aprotic solvent is DMSO.
25. (currently amended) The process of ~~claims 20 to 24~~ claim 20 wherein the bifunctional reagent is selected from 1,1'-carbonyldiimidazole (CDI), carbonyl di-1,2,4-triazole (CDT), carbonyl di-1,2,3-benzotriazole (CDB), diphenylcarbonate, cyanogen bromide, phosgene or triphosgene.
26. (original) The process of claim 25 wherein the bifunctional reagent is CDI.
27. (currently amended) The process of ~~claims 20 to 26~~ claim 20 wherein the amino compound in step (c) is $\text{H}_2\text{N}(\text{CH}_2)_3\text{CH}(\text{OH})\text{CH}_2\text{OH}$.
28. (currently amended) The process of claim 20 ~~claims 20 to 27~~, further comprising the step of (d) unmasking the masked aldehyde group M, thereby providing an aldehyde compound.
29. (original) The process of claim 28 wherein the masked aldehyde group M is - $\text{CH}(\text{OH})\text{CH}_2\text{OH}$ and the unmasking step is a periodate cleavage.
30. (currently amended) The process of claim 28 ~~or 29~~, further comprising the step of (e) linking the aldehyde compound to a protein by a reductive amination reaction.
31. (original) The process of claim 30 wherein the reducing agent in the reductive amination reaction is NaBH_3CN .
32. (currently amended) A process for modifying a *Neisseria meningitidis* serogroup A saccharide ~~saccharide~~ comprising the steps of:
- (a) providing a *Neisseria meningitidis* serogroup A saccharide;
 - (b) reacting a hydroxyl group on the saccharide with CDI in DMSO solvent;

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- (c) reacting the product of step (b) with $\text{H}_2\text{N}(\text{CH}_2)_3\text{CH}(\text{OH})\text{CH}_2\text{OH}$;
- (d) cleaving the product of step (c) with periodate, thereby providing an aldehyde compound; and
- (e) linking the aldehyde compound of step (d) to a protein by a reductive amination reaction using NaBH_3CN .

33. (currently amended) A saccharide-protein conjugate wherein the saccharide and protein moieties are linked via a group of formula (IV):



wherein A, R^1 and L are as defined in any one of claims 1 to 4.

34. (currently amended) A saccharide-protein conjugate of claim 33 wherein R^1 is H, A is - $\text{OC}(\text{O})-$ and L is $-(\text{CH}_2)_4-$.

35. (currently amended) The conjugate of claim 33 ~~or 34~~ wherein the saccharide is a *Neisseria meningitidis* serogroup A saccharide.

36. (currently amended) The ~~process of claims 30 to 32 or the~~ conjugate of ~~claims 33 to 35~~ claim 33 wherein the protein is a bacterial toxin or toxoid.

37. (original) The ~~process or~~ conjugate of claim 36 wherein the bacterial toxin or toxoid is diphtheria toxin or toxoid.

38. (currently amended) The ~~process of claims 30 to 32 or the~~ conjugate of claim 36 wherein the bacterial toxin or toxoid is CRM₁₉₇.

39. (currently amended) A pharmaceutical composition comprising a the saccharide-protein conjugate of claim 33 ~~according to any one of claims 33 to 38 and/or a modified saccharide according to any one of claims 1 to 19, and (b)~~ a pharmaceutically acceptable carrier.

40. (original) The composition of claim 39, further comprising a vaccine adjuvant.

41. (original) The composition of claim 40, which is a vaccine against a disease caused by *Neisseria meningitidis*.

42. (original) A method for raising an antibody response in a mammal, comprising administering the pharmaceutical composition of claim 39 to the mammal.

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43. (currently amended) ~~The conjugate of any one of claims 33 to 38 or A pharmaceutical composition comprising the modified saccharide of claims 1 to 19 for use as a medicament claim 1 and a pharmaceutically acceptable carrier.~~
44. (currently amended) ~~The use of A method for preventing a disease caused by one or more capsulate bacterial in a mammal comprising administering to the mammal the conjugate of claim 33. any one of claims 33 to 38 or a saccharide of claims 1 to 19 in the manufacture of a medicament for preventing or treating a disease caused by one or more capsulate bacteria.~~
45. (currently amended) The use ~~use~~ method of claim 44, wherein the disease is bacterial meningitis.
46. (new) A modified capsular saccharide comprising a moiety of the formula (I):



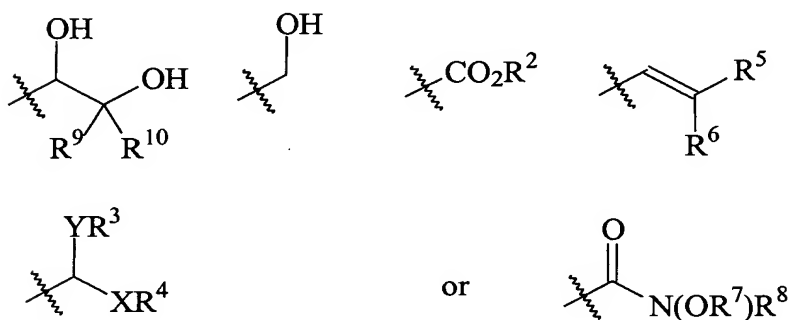
wherein:

A is a bond, -C(O)- or -OC(O)-

R¹ is selected from H or C₁-C₆ alkyl;

L is a C₁-C₁₂ alkylene group;

M is a masked aldehyde group, wherein the masked aldehyde is selected from:



wherein:

R² is selected from H, C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl;

X and Y are the same or different and are independently selected from O or S;

R³ and R⁴ are independently selected from C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl; or R³ and R⁴ are joined to form a C₃, C₄, C₅, C₆, C₇ or C₈ cycloalkyl ring containing the heteroatoms X and Y;

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R⁵ and R⁶ are independently selected from H, C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl; or R⁵ and R⁶ are joined to form a C₃ or C₁₂ cycloalkyl ring;

R⁹ and R¹⁰ are independently selected from H, C₁-C₁₂ alkyl, C₃-C₁₂ cycloalkyl, C₅-C₁₂ aryl or C₅₋₁₂ aryl-C₁₋₆ alkyl; or R⁹ and R¹⁰ are joined to form a C₃ to C₁₂ cycloalkyl ring; and

R⁷ and R⁸ are independently selected from C₁-C₁₂ alkyl or C₃-C₁₂ cycloalkyl groups.